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EXORCISING THE DEMON: AIRPOWER'S TRUE ROLE IN AMERICA'S WARS

by

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

Signature: _____

16 May 2006

Abstract

Air advocates have for too long claimed for the air arm a solo, war-winning capability. It has never obtained. After witnessing the horrific experience of trench warfare that was World War I, Giulio Douhet and Billy Mitchell were among the first to proffer theories that claimed airpower could bring about decisive, strategic results and possibly even obviate the need for surface forces' involvement in wars. Their theories were expanded upon by the "Bomber Mafia" in the Air Corps Tactical School (ACTS) on the eve of World War II. In the 1990s, Colonel John Warden updated the ACTS theory based on the advent of precision weaponry and superior information technologies. The problem is that none of the air theorists got it right; means applied in air strategy throughout America's wars did not achieve ends anticipated by theory. There was no transmission belt in theory and, therefore, none to be found in strategy. Instead, the record shows that a joint force conception and execution of strategy is what has won wars in the past and will continue to win wars in the future. With that in mind, airpower must forever be considered one part of the joint force, not the decisive force. Indeed, Airmen need to take this a step further and claim less universal applicability for airpower ideas. It is time to exorcise the demon that resides in the strategic-level "cause-and-effect" and systems/systematic kind of thinking that has long been the hallmark of air theorists. Mechanical approaches to strategy ignore the reality that war is about acceptable political outcomes. Instead of using a generic, systems-based approach, strategy must be based on the particular needs of the situation at hand.

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INTRODUCTION

Airpower theory and doctrine have evolved significantly over the last century. From the beginning, however, one major theme contained in air theory and doctrine has remained constant: the belief that airpower can bring about decisive, strategic effects and may even obviate the need for surface forces' involvement in wars. In all its various forms, through myriad messengers and to varying degrees, this line of thinking has carried down to the present day. Before World War II, airpower enthusiasts claimed that strategic bombing would shorten major wars significantly and convince enemy populations to sue for peace on a timeline far shorter than the one experienced in World War I. In the immediate aftermath of World War II, with apparent vindication in the form of Japan's surrender after the atomic bombings in August 1945, strategic nuclear bombing theory and doctrine promised yet again to be able to deliver quick decisive victory, or at a minimum, deter world enemies from engaging in war. Yet, the limited conflicts in Korea and Vietnam seemed to dispel that belief in relatively short order. Operation DESERT SHIELD/DESERT STORM, however, along with a pair of conflicts in the Balkans in the mid- and late-1990s, gave new impetus to claims of strategic efficacy for airpower. Airmen quickly and zealously claimed decisive results for air strategies employed in all three of those wars.

Victory at relatively low cost in American blood in the wars throughout the 1990s led to even more grandiose claims for airpower at the dawn of the 21st Century. For example, the opening paragraph of the first page of Air Force Doctrine Document (AFDD) 2-1, *Air Warfare*, released by the US Air Force on 22 January 2000, noted that "in many instances [airpower] will be the military [force] of choice. Future advances in stealth, precision and lethality will make [airpower] increasingly more effective at all levels of warfare across the

range of military operations."[1] There was much appeal in these claims and, as a result,

overall campaign strategies that incorporated these ideas—and thus had roots deriving

directly from airpower theory, doctrine and strategy—began to infiltrate joint forces'

thinking.

Arguably, however, an important contributor to the mixed results thus far obtained in

Operation ENDURING FREEDOM and Operation IRAQI FREEDOM was precisely this

line of thinking. Employing a relatively small military force in both conflicts, the United

States attempted to exploit "its advantage in precision airpower, win the war in just days, and

with few casualties among friendly forces and enemy civilians."[2] In both Afghanistan and

Iraq, the US initially employed decapitation strategies using strategic air attack in an attempt

to achieve cascading strategic effects and, presumably, a quick, cheap victory. Robert A.

Pape summed it up very eloquently in 2004 when he wrote that "advocates of [airpower]

have contended that wars can be won by selectively eliminating an enemy [country]'s

leaders, its communications systems and the economic infrastructure of its big cities. [They]

are wrong."[3]

In other words, despite fantastic claims for most of the past century that airpower can

do it alone, an objective review of the historical record more readily supports a contention to

the contrary. It is long past time for Airmen to acknowledge this fact and begin advocating

and implementing wartime strategies that match the reality. Indeed, for purposes of theater

strategic campaign planning and execution, airpower must forever be considered one part of

the required joint force, not the decisive force. That is not to say that airpower should be

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[1] United States Air Force, *Air Warfare*, Air Force Doctrine Document 2-1 (Maxwell AFB, AL: 22 January 2000), i.
[2] Robert A. Pape, "The True Worth of Airpower," in *Foreign Affairs,* Mar/Apr 2004, Vol. 83, Issue 2. ProQuest Document ID 586448701; New York, (16 May 2006).
[3] Ibid.

relegated to a purely tactical, supporting role, which is the other, even more irresponsible end of the spectrum.[4] It is merely an admonishment that airpower advocates and air strategists need to seek out, seize, and remain firmly afoot on the responsible middle ground. That middle ground, as Dr. Milan Vego has so rightly pointed out, exists in the idea that "no single service or single type of force can accomplish a properly defined and articulated strategic objective by employing its forces alone."[5]

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[4] And, as such, airpower in a purely supporting, tactical role will not be elaborated upon in this essay.
[5] Milan N. Vego, *Operational Warfare* (Newport, RI: US Naval War College, 2000), 376.

BACKGROUND: EVOLUTION OF AIRPOWER THEORY AND DOCTRINE

From the very beginning, air theorists and strategists have been primarily on a quest for rapidity and decisiveness. In this desire, they are not now—nor have they ever been—alone. Current joint operations doctrine exemplifies the pervasiveness of this idea when it states that "the fundamental principle for employment of US joint forces is to take decisive action to ensure achievement of the objectives established by the NCA while concluding operations in the shortest time possible and on terms favorable to the United States."[6] The larger driver behind this principle, and a key contributor to the allure of airpower's Siren call, is the fact that "the American people expect decisive victory and abhor unnecessary casualties."[7] It is clearly not the case, then, that today's Airmen have their hearts in the wrong place. Nor have their intentions been misguided or malevolent. They are but heirs to a legacy, and a most ingenuous one at that. It is more in the systemic and systematic lines of thinking and the concomitant, ostentatious assertions of airpower's strategic efficacy where they have wandered astray. In viewing potential enemies as predictable systems that will "do precisely this if we do precisely that," airpower advocates have propagated an impersonal, predictable, and clean 'cause-and-effect' way of thinking about and executing a business (war) that is very personal, very unpredictable and often very messy. The origins of this kind of thinking date all the way back to the period between the two world wars.

Italian General Giulio Douhet and US Army General Billy Mitchell were arguably the most important and influential of the early airpower theorists. Motivated largely by their personal experiences stemming from the gruesome catastrophe of trench warfare in the Great

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[6] United States Joint Chiefs of Staff, *Joint Publication 3-0: Doctrine for Joint Operations* (Washington, DC, 10 September 2001), II-1.
[7] Michael P. Noonan, "Explorations in Strategy," book review in *Orbis* (Spring, 1997), available at http://www.findarticles.com/p/articles/mi_m0365/is_n2_v41/ai_19416345, (16 May 2006).

War of 1914-1918, both men believed they saw in the future of airpower a war-winning capability that could eliminate the requirement for these prolonged engagements of massed surface forces in cruel and bloody close-quarters combat.

For his part, Douhet believed the air arm to be innately offensive and capable of achieving strategic effects.[8] In order, he viewed the missions of airpower as 1) achieving command of the air, and 2) conducting strikes against ground targets to destroy the material and moral resistance of the enemy.[9] "The airplane was unique in its ability to perform these missions. It could leap over fortified lines of defense, mass anywhere and attack any objective in enemy territory. Consequently, the boundaries of future wars would be national boundaries, with civilians and military alike subjected to the effects of war."[10] Today, Douhet's central thesis is very well known to Airmen all over the world and is summarized in this passage from his book, *The Command of the Air*:

> A complete breakdown of the social structure cannot but take place in a country subjected to this kind of merciless pounding from the air. The time would soon come when, to put an end to horror and suffering, the people themselves, driven by the instinct of self-preservation, would rise up and demand an end to the war—this before their army and navy had time to mobilize at all![11]

Billy Mitchell also believed in the supreme efficacy of airpower, the proper maturation and employment of which would make fielded armies obsolescent and the majority of the navy obsolete:

> The advent of airpower which can go straight to the vital centers and entirely neutralize or destroy them has put a completely new complexion on the old system of making war. It is now realized

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[8] Steven M. Rinaldi, *Complexity Theory and Airpower: A New Paradigm for Airpower in the 21st Century*, available at http://www.ndu.edu/inss/books/books%20-%201998/Complexity,%20Global%20Politics%20and%20Nat'l%20Sec%20-%20Sept%2098/ch10a.html, (16 May 2006).
[9] Giulio Douhet, *The Command of the Air* (Washington, D.C.: Office of Air Force History, 1983), 142.
[10] Rinaldi.
[11] *The Command of the Air,* 58.

that the hostile main army in the field is a false objective and the real objectives are the vital centers. The old theory, that victory meant the destruction of the hostile main army, is untenable.[12]

In general, and due to their contextual milieu, both Douhet and Mitchell envisioned future war as a massive, violent convulsion that would occur between two states. Airpower employed early and against 'vital centers' in such conflicts, however, could achieve a more humane victory: it would render war so quick and decisive that total suffering of combatant surfaces forces and parent societies would be significantly reduced from levels experienced in World War I. The ultimate goal for both theorists, then, was clearly to affect the will of the enemy people so that they, in turn, would urge their leadership to sue for peace.

The "industrial web" theory—advocated by the US Army Air Corps Tactical School (ACTS) in the years just prior to World War II—also aimed to influence the will of an enemy nation's people. A clear extension and expansion of Douhet's and Mitchell's ideas regarding the primacy and efficacy of airpower, the industrial web theory claimed that "land and sea forces must accept intermediate objectives. Before they can accomplish the ultimate aim, they must defeat the enemy's surface forces. Air forces, on the other hand, are capable of immediate employment toward accomplishing the ultimate aim. They can be used to break down the will of the mass of the enemy people."[13]

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[12] William Mitchell, *Skyways: A Book on Modern Aeronautics* (Philadelphia: J. B. Lippincott Company, 1930), 255. See also Rinaldi, who points out that while both men advocated a separate and independent Air Force, commanded by Airmen, Mitchell's ideas in the area were more well-developed and recorded in several places in his writings. Mitchell thought that "the country needed a separate air force with a centralized command system to control all aspects of the employment of aircraft. The air force would have to organize its resources so that it could swiftly mobilize in the event of war. This would allow the air force to strike first at any potential enemy, thus gaining a considerable strategic advantage. *The army and navy would assume secondary roles. He particularly downplayed the role of the surface navy. Its large infrastructure, high cost, and the vulnerability of ships to aerial bombardment, fueled his conviction that surface navies were rapidly losing their importance to national defense. Mitchell could only see prominent national defense roles for the air force, the army, and the submarine corps.* (Emphasis added)

[13] Major Muir S. Fairchild, "National Economic Structure," AF 9 and 10C, instructor, Air Force course (Maxwell Field, AL: ACTS, 5 Apr 1939), 8. Quoted in Scott D. West, *Warden and the Air Corps Tactical School: Déjà vu?* (School of Advanced Airpower Studies, Maxwell AFB, AL: Oct 1999), 7.

Further, the ACTS theory viewed the enemy as a complex, interacting industrial system dedicated to supporting the war effort. ACTS instructors and adherents believed that heavy bombers employing daylight precision bombing could target effectively the critical bottlenecks in this system and create conditions by which physical and moral support for the war effort would come to a halt. In general terms, the school "maintained that the destruction of the war materiel manufacturing base and the concomitant breakdown of the morale of the enemy civilian population would cause the enemy to capitulate. [This] doctrine profoundly influenced [US air operations in Europe] during World War II."[14]

In the late 1980s and throughout the 1990s, Colonel John Warden greatly expanded on this idea of the enemy as a system in his "Five Rings Model." In the assumptions underlying his model, Warden completely decoupled the physical and moral sides of an enemy, arguing that the physical side alone was what should concern air strategists.[15] The enemy system that Warden posited comprised five concentric rings with leadership being the actual and symbolic bull's-eye.[16] This innermost ring was the most critical because it represented the only enemy element that could make concessions.[17]

[14] Rinaldi.

[15] Ibid.

[16] Col John A. Warden III, *Air Theory for the Twenty-first Century,* available at http://www.airpower.maxwell.af.mil/airchronicles/battle/chp4.html, (16 May 2006). From the outside working in, the five rings are as follows: fielded military, population, infrastructure, system essentials, and leadership. Warden carries the analogy to the operational and even tactical level. For example, in this particular paper, he says, "a wide variety of systems ranging from an individual to an electric company are organized with remarkable similarity." Warden asserts that, in the purely physical sense, this model helps us "put into effect injunctions from ancient Greek and Chinese alike to "know thyself" and "thine enemy…this systems approach provides an easy way to categorize information and to understand the relative importance of any particular bit."

[17] Col John A. Warden III, "The Enemy as a System," *Airpower Journal* 9, no. 2, Spring 1995, available at http://www.airpower.maxwell.af.mil/airchronicles/apj/warden.html. (16 May 2006). In this article, Warden states that "it is imperative to remember that all actions are aimed against the mind of the enemy command or against the enemy system as a whole. [If the] command element cannot be threatened directly, the task becomes one of applying sufficient indirect pressure so that the command element rationally concludes that concessions are appropriate, realizes that further action is impossible, or is physically deprived of the ability to [continue combat].

While Warden was vehemently opposed to attacking or otherwise making the civilian populace suffer, he argued that by employing the concept of parallel attack—that is, by attacking multiple strategic and operational centers of gravity simultaneously with precision weapons—air forces could induce strategic paralysis on a country's armed forces and completely disrupt enemy leadership's ability to orchestrate and, thus, carry on the conflict. Based largely on his brief association with the Operation DESERT STORM air plan "Instant Thunder," no doubt, Colonel Warden and his Five Rings model have received a lot of attention in military circles over the past 15 years. Indeed, in many publications, he himself has analyzed numerous times the air operations in Iraq during 1991 through the lens of his parallel warfare, strategic paralysis and Five Rings theories. Invariably, Warden's analyses claim for airpower employing precision weaponry an efficacy of strategic proportions.[18]

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[18] A quote from *Air Theory for the Twenty-first Century* shows just how far Warden thought airpower's capabilities extended: "Beyond these Gulf War lessons, which have applicability well into the future, it behooves the air planner to think of one other area: what can be done with airpower that in the past we knew could only be done with ground or sea power or couldn't be done at all? The question must be addressed for several reasons: airpower has the ability to reach a conflict area faster and cheaper than other forms of power; employment of air power typically puts far fewer people at risk than any other form (in the Gulf War, there were rarely more than a few hundred [Airmen] in the air as opposed to the tens of thousands of [Soldiers] and [Sailors] in the direct combat areas); and it may provide the only way for the United States to participate at acceptable political risk (use of airpower does not require physical presence on the ground). Let us look at just one example: Suppose a large city is under the control of roving gangs of soldiers, and it is American policy to restore some degree of order to the city. Normally, we would think that could only be done by putting our own [Soldiers] on the ground. But what if policymakers are unwilling to accept the political and physical risks attendant to doing so? Do we do nothing, or do we look for innovative solutions? If we define the problem as one of preventing groups of soldiers from wandering around a city, we may be able to solve it from the air. Can we not put a combination of AC-130s and helicopters in the air equipped with searchlights, loudspeakers, rubber bullets, entangling chemical nets, and other paraphernalia? When groups are spotted, they first receive a warning to disperse. If they don't they find themselves under attack by non-lethal, but unpleasant, weapons. If these don't work, lethal force is at hand. It may be very difficult to prevent an individual from skulking around a city or even robbing an occasional bank. *Single individuals, however, constitute a relatively small tactical problem since they are unlikely to be able to cause wide-scale disruption as can multiple groups.* The latter problem is serious but manageable; the former is a police matter. By the same token, we know that we will be called on to conduct humanitarian and peacemaking operations. If we think about food delivery as the same as bomb delivery and understand that with food, as with bombs, our responsibility is to distribute it to the right people, *we should be able to do as well with food as we do with bombs.* To do so, however, will require putting as much effort into developing precision food-delivery techniques as we put into developing precision bomb or cluster-bomb capabilities. The problem is the same and is theoretically susceptible to an airpower solution if we are willing to think outside the lines. And indeed, thinking outside the lines will be a necessity if airpower is to prosper and to play a key role in defending American interests well into the next century." (Emphasis added).

This short historical review of the evolution of major airpower theories shows that, in one way or another, all of them espoused a cause-and-effect link between bombing an enemy and enemy capitulation. In short, they all claimed a form of decisive, strategic efficacy for the air arm. That this is reflected in modern US Air Force (USAF) thinking is easy to demonstrate. Indeed, a brief review of Air Force Doctrine Documents (AFDDs) reveals that all of these theories have had an inexorable impact on development of USAF doctrine. For example, on the very first page of Air Force Doctrine Document 2-1, *Air Warfare*, which was published in 2000, there is undeniable evidence of the Douhet, Mitchell, ACTS and Warden influence:

> Operation DESERT STORM (1991) validated the concept of a campaign in which aerospace power, *applied simultaneously against strategic and operational centers of gravity*, [rendered] opposing military forces virtually ineffective. *Aerospace power emerged as a dominant form of military might.* It was decisive primarily because it achieved *paralysis of the enemy at all levels of war with minimal casualties to friendly forces.* Recent events in Bosnia (1995) and Kosovo (1999) continue to revalidate that air warfare [will continue to be an essential and sometimes the *decisive* tool in future military operations].[19] (Emphasis added)

This theme was continued well into 2003 with the publication of AFDD 2-1.2, *Strategic Attack*, on 30 September. In addition to redefining the term "Strategic Attack," the document clearly delineates fundamental doctrinal statements regarding that capability and goes even further, making the bald claim that:

The experiences of US forces in Iraq suggest that individuals *can* cause widespread disruption (by employing IEDs, for example) and this illuminates just one problem that airpower cannot handle alone. In addition, food delivery from the air proved to be very problematic in Afghanistan. When US aircraft dropped food for the people during the "guns and butter" strategy employed in the early days of Operation ENDURING FREEDOM, it was discovered that "children could mistake the colorful yellow bomblets released by cluster bombs for either air-dropped food packets—which [were] also yellow—or for toys." The life, limb and information operations implications of such a catastrophe are clear. For more information, see "Delivery Poses Huge Problems for Afghan Aid," available at http://www.refugeesinternational.org/content/article/detail/1037/?PHPSESSID=8f64722853220b90f0c6c57dd04e585b. (16 May 2006).

[19] *Air Warfare*, i.

Operation DESERT STORM proved the efficacy of strategic attack and Operations DELIBERATE FORCE, ALLIED FORCE, ENDURING FREEDOM and IRAQI FREEDOM further refined it. In these operations, air and space assets conducting strategic attack proved able to deny enemy access to critical resources, defeat enemy strategies, and decisively influence enemy decisions to end hostilities on terms favorable to US interests. Today's Air Force possesses an *independent war-winning potential* distinct from and complementary to its ability to decisively shape surface warfare.[20] (Emphasis added).

On 7 December 2005, Air Force leadership continued to propagate the idea that airpower can deliver strategic effects disproportionate to efforts expended when they released the new Air Force mission statement. The statement said, in part, that "the mission of the United States Air Force is to deliver sovereign options for the defense of the United States of America and its global interests—to fly and fight in Air, Space and Cyberspace."[21] While the mission statement does not include a precise definition of "sovereign options," there can be no doubt about the implication, especially when one considers the evolution of airpower theory while keeping in mind possible synonyms for the word "sovereign."[22]

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[20] United States Air Force, *Strategic Attack,* Air Force Doctrine Document 2-1.2 (Maxwell AFB, AL: 30 September 2003), 1.

[21] MSgt Mitch Gettle, "Air Force Releases New Mission Statement," *Air Force Link* (8 Dec 2005), available at http://www.af.mil/news/story.asp?id=123013440, (16 May 2006).

[22] Such as "independent", "autonomous", "supreme", "superior" and "absolute," to name just a few.

ANALYSIS

As seen in the previous section, throughout the evolution of airpower theory, doctrine and strategy conception there has always been an implicit link made between "bombing this and achieving that" at the strategic level. In other words, it was implied that there would be a very predictable *reaction* by the public and/or enemy leadership to the *action* of bombing. Missing from these predictions, however, was a detailed explanation of the transmission belt that would lead from destruction of specific target sets to enemy capitulation. This major gap in airpower thought persists today. It came about largely because the theories proffered by Douhet, Mitchell, ACTS and Warden were based on misinterpretations of the historical evidence, unproven assumptions, or faulty logic.

Douhet and Mitchell had a very small data set on which to draw in order to support their assertion that, in the wake of strategic bombing of vital centers, or the population base itself, the enemy people would rise up and demand that their government sue for peace. Unfortunately, their interpretation of even that data missed the mark significantly. The data consisted primarily of the strategic bombing efforts conducted by German zeppelins and Gotha bombers against the British home islands in World War I.

While it is true that the use of zeppelins by the Germans in 1914 "instilled fear and panic in the [British] people by flying over their cities," the initial shock wore off quickly.[23] When the Gotha bombers began bombing England in 1917, however, the impact was more severe and endured longer:

> On May 23, 1917, a fleet of 21 Gothas appeared over the English coastal town of Folkestone. On the deadliest day of bombing yet, 95 people were killed, and *England began to panic*. At noon on June 13, another Gotha fleet dropped bombs onto London. For the

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[23] US Centennial of Flight Commission, *Bombing During World War I*, available at http://www.centennialofflight.gov/essay/Air_Power/WWI_Bombing/AP3.htm, (16 May 2006).

next month, the daily raids on the capital city met with little opposition from the Royal Air Force, *angering the population of London. Production levels within the city dropped and citizens began to feel that their government was incapable of protecting them.*[24] (Emphasis added).

Both Douhet and Mitchell believed they saw something in the British public's panicked reaction to the zeppelin and Gotha bombings that in reality was not there. True, the population was angry at the government, but "the effect of the bombings was not a public uprising against Parliament. [The British people instead] demanded that the military protect them and stop the bombs."[25] When the government was subsequently seen as doing something to protect its people—in the form of a strengthened Royal Air Force—public anger subsided and production levels returned to nearly normal.[26]

The ACTS "Bomber Mafia" and Colonel Warden were no less misguided in the major assumptions that underpinned their theories. As mentioned earlier, both depicted "strategic entities as definable systems with centers of gravity whose destruction [could] influence the system as a whole."[27] This demonstrates unequivocally that both theories "presupposed a rational actor, or to use Graham Allison's term, [a *Model I enemy*]," who would act logically and predictably.[28] For his part, Warden believed that "enemies, whether they be states, criminal organizations, or individuals all do the same thing; they almost

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[24] Ibid.

[25] Ibid.

[26] Ibid. As a result of Parliament's strengthening of the Royal Air Force, "by July 1917, the large unwieldy Gothas were forced to resort to night raids so the darkness could shield them from Britain's Sopwith Camels—light, maneuverable planes. By the war's end, the raids had stopped entirely since the hits were not worth the German aircraft losses. In total, there were 27 Gotha raids. The English reported 835 killed and 1,990 wounded. Damage from the raids totaled £3,000,000, but the loss of production time from workers having to seek shelter in the middle of the day, or suffering exhaustion from having to leave their beds to seek shelter at night, had a far greater impact." Clearly, this impact was not decisive and, in any case, the revelation does little to negate the argument that theorists such as Douhet and Mitchell learned the wrong lessons from the public's reaction to these bombing raids.

[27] Major Howard D. Belote, "Warden and the Air Corps Tactical School: What Goes Around Comes Around," *Aerospace Power Journal*, Fall 1999, available at http://www.airpower.maxwell.af.mil/airchronicles/apj/apj99/fal99/belote.html. (16 May 2006).

[28] Ibid.

always act or [do not] act based on some kind of cost-benefit ratio."[29] Lt Col Peter Faber has

argued that the ACTS theorists held very similar beliefs and ignored the possibility that

enemies might act in "potentially obscure organizational, bureaucratic, or emotional" ways.[30]

These assumptions are symptomatic of an even larger problem with both theories—a

lack of tangible evidence "to support their 'web' and 'body' analogies."[31] For their part, the

"ACTS theorists described an economic house of cards using a sample size of one—the

American economy of the 1930s."[32] Not only was this data set too limited to be of realistic

value in 'proving' the industrial web theory, it took no account of culture, government type

or myriad other factors that might obtain in an enemy country and, thus, impinge on

execution of a bombing strategy against it. It is clear then, that the ACTS theory almost

completely discounted the play of friction in war and, at the same time, overstated the case

for economic collapse and subsequent capitulation of an enemy.[33] Warden's metaphor was

equally problematic.

Warden acknowledged that "thinking about something as large as a state is difficult,"

so he started his analogy with something "somewhat more familiar to us—our own bodies."[34]

In this conception—in which Warden declared "we have identified a complete system"—

Warden equated the brain to government; food and oxygen to society's energy and financial

resources (oil, electricity, food and money); blood vessels, bones and muscles to roads,

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[29] *Air Theory for the Twenty-first Century.*
[30] Lt Col Peter Faber, "Interwar US Army Aviation and the Air Corps Tactical School: Incubators of American Airpower," in Col Phillip S. Meilinger, ed., *Paths of Heaven: The Evolution of Airpower Theory* (Maxwell AFB, AL: Air University Press, 1997), 221.
[31] Belote.
[32] Ibid.
[33] Faber, 220. Faber points out that the industrial web theory was based on a "mid-Victorian faith in technology" and "wrongly assumed that revolutionary bomber-related technologies would produce almost 'frictionless' wars."
[34] "The Enemy as a System."

airfields and factories; cells to people; and leukocytes to the military, police and firemen.[35]

In creating his five rings model based on this set of analogies, "Warden merely rearranged a

tabular presentation of system components into rings and claimed—without empirical data—

that the diagram *proved* that the rings were interdependent, the center was most important,

the military was merely a shield for the others and effectiveness lay in working inside-out

vice outside-in."[36] The problem is that in the process, "Warden failed to provide proof that a

nation-state could be killed through decapitation."[37] More importantly, Warden missed the

fact that societies are more like hydras than humans and are, therefore, much less predictable

in their behavior.[38]

As mentioned earlier, Warden also disconnected the moral from the physical and

relegated "morale, friction and fog to a distinct category," more suited to the bygone days

when Napoleon fought with his huge land armies and Clausewitz wrote his précis.[39] Warden

believed that it was possible to

> think broadly about war in the form of an equation: **(Physical) x
> (Morale) = Outcome**. [If the physical side] of the equation can be
> driven close to zero, the best morale in the world is not going to

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[35] Ibid.

[36] Belote.

[37] Ibid.

[38] Ron Leadbetter, "Hydra," in *Encyclopedia Mythica* available at
http://www.pantheon.org/articles/h/hydra.html. (16 May 2006) "The Hydra had the body of a serpent and many heads (the number of heads deviates from five up to one hundred; there are many versions but generally nine is accepted as standard), of which one could never be harmed by any weapon, and if any of the other heads were severed, another would grow in its place (in some versions two would grow)." It is always dangerous to criticize one metaphor or analogy with another on the pretense that the replacement is better than the original. In this case, I am not trying to directly replace the human in Warden's theory with the hydra but to point out one simple truth: in a complex society, it is fallacious to assume that, even if one could eliminate the leadership, it would not or could not be replaced. Indeed, in many countries (such as modern day Iraq, for example) elimination of the leadership simply allows some other faction to fill in the void. The main point to be made here is that when Warden says that "there is no machine that can take over strategic functions from the brain," he is only right in the true sense of the phrase—that is, in the way it applies directly to the human body. It does not carry through logically to the rest of his analogy. In other words, while it is true that a human will die if his/her head is lopped off, a strategic entity—such as a nation-state or some other equally complex and diverse group—will still exist when its leadership is removed, and it is highly likely that some individual or group will step into the newly-created vacuum.

[39] "Enemy as a System."

produce a high number on the outcome side of the equation. Looking at this equation, we are struck by the fact that *the physical side of the enemy is, in theory, perfectly knowable and predictable*. Conversely, the morale side—the human side—is beyond the realm of the predictable in a particular situation because humans are so different from each other. Our war efforts, therefore, should be directed primarily at the physical side.[40] (Emphasis added)

Clearly, Warden saw war from the air as something almost clean and certainly impersonal—the enemy was machine-like and, therefore, *knowable and predictable*. Strategic attack would work because "of the fragility of states at the strategic levels of war. Countries are inverted pyramids that rest precariously on their strategic innards—their leadership, communications, key production, infrastructure, and population. If a country is paralyzed strategically, it is defeated and cannot sustain its fielded forces though they be fully intact."[41] In later writings, Warden argued that the "revolution [that was the 1991] Gulf War" validated his theory of war from the air.[42] Indeed, he was not alone in the venture; airpower enthusiasts from all quarters claimed vindication in the aftermath of Operation DESERT STORM. Nor was that war the first or only one from which Airmen drew 'enduring' lessons. The problem is that these so-called 'lessons' are hard to reconcile with the available facts. Indeed, the 'transmission belt' gaps in theory elucidated in this section match gaps in the reality of airpower's strategic efficacy experienced in America's wars since World War II.

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[40] Ibid.
[41] *Air Theory for the Twenty-first Century.*
[42] "Enemy as a System."

RECOMMENDATIONS

It is long past time to exorcise the demon that lives in the "airpower can do it all" mantra. Airmen as a whole, and air strategists in particular, need to conduct an objective review of the historical record and closely scrutinize current events. What will be found is that, even though airpower's importance has risen significantly in every one of America's conflicts dating all the way back to World War I, it has never carried the day without some contribution from either US or coalition surface forces.

In World War II, "the cumulative effects of strategic bombing took their toll on the enemy in Europe, but there was [neither a] rapid, decisive victory" nor was victory gained without significant cost in blood and treasure.[43] The Army Air Forces alone lost nearly 23,000 aircraft and sustained 121,867 casualties during World War II.[44] In addition, and most importantly, airpower did not obviate the requirement for surface forces—far from it, in fact. Operation OVERLORD, the Allied invasion of France in June 1944 was always conceived as, and in the event proved itself to be, the decisive thrust into the heart of mainland Germany that would culminate in Allied victory. The air strategy employed in Western Europe certainly did not fulfill Mitchell's prediction that "months and even years of contest [between] ground armies with a loss of millions of lives will be eliminated in the future."[45] Neither did it prove the validity of the ACTS industrial web theory.

In Japan at the end of World War II, however, many airpower enthusiasts believed they could point to an example of just how right Giulio Douhet was. But even these claims of victory secured by the air arm ring more and more hollow with every passing year. While

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[43] David Allvin, *Airpower Strategy in the Interwar Years: Not Ready for Primetime* (Washington, DC: National Defense University, National War College, Undated), available at http://www.ndu.edu/library/n4/n045602A.pdf. (16 May 2006).

[44] Ibid.

[45] William Mitchell, *Winged Defense* (New York: Dover, 1988), 127.

it is impossible to deny that the atomic bombings of Hiroshima and Nagasaki were the proximate cause of Japan's surrender, it would be folly to claim sufficiency for the acts. To do so would be to ignore the vitally important strategic contribution of, as well as the tremendous costs incurred in, the island hopping campaign through the Pacific in which so many Soldiers, Sailors, Marines and Airmen lost their lives. In addition, to defend the assertion that there is something humane about wiping entire cities off the map would be an exercise in futility. While there can be no doubt that dropping the atomic bombs on Japan did prevent countless casualties for the Allies by eliminating the requirement for an invasion of the Japanese mainland, the act itself was only humane for one side in the conflict. In short, Douhet was not proven right by events in Japan in 1945.

The series of decapitation strategies inspired by John Warden's Five Rings model have not fared any better. In fact, Robert Pape argues that "US forces have tried the [decapitation] strategy on six different occasions in the past [two decades] and it either failed or backfired each time."[46] (For details on each, see Appendix A) In the last of these attempts, the 2003 Operation IRAQI FREEDOM campaign, Pape points out that even though

> the war began with an effort to shock and awe Iraqi leadership into capitulating without a fight, [this quickly failed]. As a result US airpower was soon turned against Iraq's forces in the field. *It appears that the war was won once US air power shifted from attacking leadership targets to bombing Iraq's Republican Guard and other regular military units*. The air raids enabled US ground forces to move relentlessly through many contested chokepoints and overrun key strategic positions before major Iraqi combat units could reorganize for a protracted defense of Baghdad.[47] (Emphasis added)

It is in this kind of successful employment of airpower in conjunction with surface forces—what Robert Pape calls a 'hammer-and-anvil' strategy—where the first and most

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[46] Pape.
[47] Ibid.

important recommendation for air strategists resides.[48] The record shows that the true recipe

for success in combat strategy is to employ airpower as the highly-maneuverable hammer

and surface forces as the less maneuverable but still potent anvil. Despite some Airmen's

claims to the contrary, this joint force conception of strategy was not only used in Operation

IRAQI FREEDOM, it was also applied in Operations DESERT STORM, DELIBERATE

FORCE, ALLIED FORCE and ENDURING FREEDOM.

In Iraq in 1991, it was "not the bombing of Baghdad that [defeated Iraq], it was the

"direct pounding of the Iraqi army in Kuwait which denied Saddam Hussein a chance to

inflict heavy costs on the coalition ground offensive."[49] While airpower was hugely

important—killing more than 30,000 Iraqi troops and "convincing another 100,000 of them

to desert"—the 100-hour ground campaign was still necessary and it was the combination of

the two that was decisive.[50]

In Bosnia in 1995, the US did not employ its own ground troops in the role of the

anvil, which may explain the ease with which US Airmen claimed sufficiency for the air arm

in that conflict. The reality, however, is that what "brought the Serbs to the bargaining table

and helped determine the boundaries of the final map negotiated at Dayton," was a

combination of air and ground power.[51] While US aircraft pounded important military

targets in the field, 100,000 Croat and Bosnian Muslim ground forces battled the 50,000

troops that comprised the Bosnian Serb army.[52] In the end, the US air forces' primary

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[48] Ibid.
[49] Ibid.
[50] Ibid.
[51] Ibid.
[52] Ibid.

contribution to the campaign was in helping to "shift the balance [of power] in the ground war."[53]

In 1999, Slobodan Milosevic was once again coerced, this time to accede to NATO's demands. The series of air strikes conducted against targets in Serbia and Kosovo from March to June 1999 are often hailed as the reason for Milosevic's surrender. There is compelling evidence, however, to suggest that had he not yielded, "NATO would have [mounted a ground offensive to accomplish its ultimate theater-strategic objective]."[54] While the full truth will never be known (primarily because Milosevic is now dead), the most likely and convincing "explanation is that Milosevic surrendered from fear that NATO would invade Kosovo, with the devastating help of precision airpower."[55]

The 2001 war in Afghanistan "imitated and updated the blueprint the US tested in Bosnia in 1995."[56] US airpower and Northern Alliance troops conducted a combined arms assault that simply overwhelmed the Taliban. "The Taliban's front lines collapsed within days of first being battered from the air and on the ground, opening the way for the Northern Alliance to quickly overrun Mazar-i-Sharif and Kabul."[57] This marked yet another

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[53] Ibid.
[54] *Operational Warfare*, 379.
[55] Pape. As evidence to support his assertion, Pape notes that "In early June 1999, the United States, the United Kingdom, and other NATO countries were about to formalize a decision to mount a ground invasion of Kosovo. Former Russian Minister Viktor Chernomyrdin undoubtedly communicated to Milosevic, with whom he met numerous times that spring, that a ground war was coming. (On June 8, Chernomyrdin said in a press conference in Moscow, "If the current peace plan for a settlement in Kosovo is not carried out, the situation in the region may develop according to a different scenario. NATO has a plan for carrying out a ground operation.") The United States and the United Kingdom also took strong measures to make that threat credible. Coalition forces widened supply roads in Albania and deployed more than 35,000 troops on Kosovo's borders, while the United Kingdom called up 30,000 ground-force reservists. Anticipating a ground attack by NATO, Russia and Serbia tried to establish a Russian military presence in northeastern Kosovo in order to partition the region and retain control over some of it. Although the effort failed, it suggests that the Serbs and the Russians considered the threat of a NATO invasion credible and believed that Serbia would be defeated."
[56] Ibid.
[57] Ibid.

successful demonstration of the war-winning capability inherent in combined employment of air and surface forces.

In 1996, General Ronald Fogleman, then US Air Force Chief of Staff, said that, "we [Airmen] cannot let our enthusiasm for our primary medium of operations blind us to the advantages that can be gained by using air power in support of land and naval component objectives; [orchestrating airpower in conjunction with other component operations produces tremendous synergistic effects]."[58] *The joint force conception and execution of strategy is what has won wars in the past and will continue to win wars in the future.* While maintaining independence will always be important for all the services, air and surface forces must be considered coequal and interdependent and theater strategy should be conceived with their complete integration in mind.

The second recommendation is intimately related to the first and is important precisely *because* all US armed forces are coequal and interdependent. *Never in the history of the US military has the time been more right to expel the strategic-level "cause and effect" and systems/systematic kind of thinking that has long been the hallmark of air theorists.*[59] If it has served its purpose, this essay has demonstrated that Douhet, Mitchell, ACTS and Warden all got it wrong. The danger, as alluded to at the outset, is that joint forces'

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[58] Gen Ronald R. Fogleman, "Aerospace Doctrine—More Than Just a Theory," keynote address to the Air and Space Power Doctrine Symposium, Maxwell Air Force Base, Alabama, 30 April 1996. Available at http://www.airpower.maxwell.af.mil/airchronicles/presentation/doctrel.html, (16 May 2006).

[59] Milan N. Vego, "Effects-Based Operations: A Critique," *Joint Forces Quarterly* (2nd Quarter, 2006), 51. Dr. Vego points out that "predicting direct *first-order* effects is difficult enough; going several steps further to try to predict second-, third-, or fourth-order effects, as EBO proponents do, is a practical impossibility. There are simply too many variables. A slight change in the conditions of a single entity can generate unpredictable effects, desired and undesired." In addition, Dr. Vego notes that "the most difficult prediction is what physical actions must be accomplished to generate desired behavioral effects over a period of time. This is especially complicated at the operational and strategic levels of war because of the dynamic mix of tangible and intangible elements. The effect of one's actions on the enemy's political leadership or operational commander cannot be predicted accurately. Neither can one precisely anticipate the psychological effect on the enemy's will to fight or the attitude of the populace, particularly when the enemy's political and military culture is different from one's own., as seen in Afghanistan and in the post-combat phase of the war in Iraq. Intelligence simply cannot predict key aspects of the enemy's strategic behavior."

conceptions of force acquisition and combat strategy might be too greatly influenced by the

kind of thinking inherent in these air theorists' work. Indeed, there is some evidence that this

has already happened. The concept of effects-based operations (EBO), the roots of "which

can be traced [back] to the pre-World War II Air Corps Tactical School at Maxwell Field," is

a good example; it is creating great angst among many current and former military leaders.[60]

For example, retired Marine Corps Lieutenant General Paul Van Riper called effects-based

operations a "virus [that has] infected and continues to infect the joint community."[61]

Protests from General Van Riper and others are understandable in the context of the

messy, unpredictable—and still ongoing—operations in Iraq and Afghanistan. Marine

Corps Lieutenant General James Mattis, got it exactly right when he said that you cannot

> take down a government the same way you can an electrical grid.
> When you enter into the areas where human beings—with their
> willpower, their imagination, their courage, their fears, their
> cultural tendencies—all come to bear, the idea that you can put an
> algebraic equals sign between something you do and the response
> that you're going to get is not borne out by the last 5,000 years of
> human interaction on this planet.[62]

Indeed, it is "virtually impossible to reliably identify the effects of an operation when

facing [a 'complex adaptive' or 'interactively complex' entity such as a nation-state or even

the various insurgent groups in Iraq]."[63] And Iraq itself provides a perfect example of why

such thinking at the theater-strategic level needs to go away: After 12 years of continuous

engagement—i.e., day-to-day air combat operations in both NORTHERN and SOUTHERN

WATCH, continual intelligence gathering and analysis, etc.—we, the US, still got the single

most important assumption wrong when we invaded the country in 2003. We believed we

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[60] D.H. Gurney, "Commentary" in Milan N. Vego, "Effects-Based Operations: A Critique," *Joint Forces Quarterly* (2nd Quarter, 2006), 51.
[61] "Effects-Based Operations Under Fire: A Top Commander Acts to Defuse Military Angst on Combat Approach," in *Inside the Pentagon* (20 Apr 2006).
[62] Ibid.
[63] Ibid.

would be greeted by the Iraqi people as their liberators. That we were able to get this so wrong even after so many years of presence in-theater is certainly evidence of the fallacy contained in EBO: at the strategic level, it is impossible to predict accurately the second- and third-order effects of a particular action on an entity as complicated as a society. Clearly, and quite contrary to the beliefs of the air theorists, such "systems" are a far cry from being "knowable and predictable."

The third and final recommendation amounts to an amalgamation of the first two. War in the modern age is concerned most with achieving an acceptable political outcome (as opposed to seizing territory, for example) and acceptability applies not only to the international community but to the enemy population as well. Strategy conceived using an impersonal, mechanical, systems analysis-based approach ignores the culture, governing style, population makeup and all else that goes into making a society unique. Such an approach is certainly not feasible when the goal in war is to achieve a better state of the peace. *Instead of using a generic, systems-based approach, strategy must be conceived with specificity in order to address the particular needs of the situation at hand.* Since "theater-strategic objectives [may] encompass not only military but also political, diplomatic, economic, social, environmental, informational and often ethnic, religious, and other elements," all of these things need to be considered when developing strategy.[64] Airpower has certainly proven itself to be capable of achieving stunning operational-level successes and of making significant contributions towards accomplishment of theater-strategic objectives, but it will never be capable of shaping and achieving alone a desired end state that

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[64] *Operational Warfare,* 378.

entails so many complicated and diverse considerations. A truly integrated joint strategy is

required for that.[65]

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[65] Obviously, a joint approach is not all that is necessary to achieve the varied and diverse goals described here. Along with joint/combined military forces, there needs to be a concerted interagency effort. This is acknowledged here but cannot be elaborated upon because it is beyond the scope of this essay.

CONCLUSION

Airpower has played an important role in America's wars over the course of the past century. In fact, some have said that airpower "has fundamentally changed the nature of warfare," and indeed it is hard to argue convincingly the case against that contention.[66] The problem is that Airmen have for too long claimed for the air arm a solo, war-winning capability that has never obtained. Giulio Douhet and Billy Mitchell were among those who started the trend when they proffered their theories after witnessing the horrors of trench warfare in the Great War. The US Army Air Corps Tactical School carried on the tradition with their industrial web theory developed on the eve of World War II. US Air Force Colonel John Warden updated the ACTS theory to match what he saw as a revolutionary capability inherent in modern precision weapons and information technology. This essay has demonstrated, however, that throughout the history of war from the air, means applied in strategy did not achieve ends anticipated by theory. There was no transmission belt in theory and, therefore, none to be found in strategy. Instead, the historical record shows that *the joint force conception and execution of strategy is what has won wars in the past and will continue to win wars in the future.* With that in mind, *airpower must forever be considered one part of the joint force, not the decisive force.* Indeed, Airmen need to take this a step further by "claiming less universality for airpower ideas."[67] It is quite clear that *never in the history of the US military has the time been more right to expel the strategic-level "cause-and-effect" and systems/systematic kind of thinking that has long been the hallmark of air theorists.* Mechanical approaches to strategy ignore the reality that war today is about acceptable

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[66] Fogleman.
[67] Belote.

political outcomes. *Instead of using a generic, systems-based approach, strategy must be conceived with specificity in order to address the particular needs of the situation at hand.*

APPENDIX A

Attempted Decapitation Strategies

1) <u>1986 attempted bombing of Muammar al-Qaddafi</u>: Though US bombs missed Qaddafi in his tent, they killed his daughter, and probably inspired the "revenge bombing of Pan Am flight 103 that killed 270 civilians."[68]

2) <u>Operation DESERT STORM</u>: In 1991, US air forces struck 235 strategic targets in and near Baghdad in the opening days of the conflict. Saddam Hussein was not killed and did not capitulate as a result of these strikes.[69]

3) <u>Operation DESERT FOX</u>: During this 1998 attack, 100 leadership and "other" targets were struck in Iraq. Again, there was no apparent effect on Saddam Hussein or his ability to rule his armed forces or his country.[70]

4) <u>Operation ALLIED FORCE</u>: The US launched what was to be a "three-day air campaign against 51 targets in and near Belgrade."[71] Bombing began on 24 March 1999 and was suspended briefly on 10 June 1999. The entire campaign ended on 20 June but "the strikes failed to coerce Milosevic. They did, however, prompt the Serbian military to kill thousands of Kosovars and expel almost a million from the country."[72]

5) <u>Operation ENDURING FREEDOM</u>: In Afghanistan during 2001, the US tried for weeks to kill Mullah Muhammad Omar and other Taliban leaders to no avail.[73]

6) <u>Operation IRAQI FREEDOM</u>: "The 'shock-and-awe' campaign in Iraq [yielded] disappointing results."[74] Though the US struck literally hundreds of leadership and communications targets—including two sensational and publicized attempts on Saddam Hussein himself—these "raids failed to kill or topple Saddam."[75]

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[68] Robert A. Pape, "The True Worth of Airpower," in *Foreign Affairs,* Mar/Apr 2004, Vol. 83, Issue 2. ProQuest Document ID 586448701; New York, (16 May 2006).
[69] Ibid.
[70] Ibid.
[71] Ibid.
[72] Ibid.
[73] Ibid.
[74] Ibid.
[75] Ibid.

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